	Application No.	Applicant(s)
Notice of Allowability	10/607,811	SLACKMAN, RICHARD O.
	Examiner	Art Unit	
	Srirama Channavajjala	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *10/24/06*.

2. ☒ The allowed claim(s) is/are *14,15,17-20,34,35,37-40,54,55 and 57-60*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

1.   Claims 14-15,17-20,34-35,37-40,54-55,57-60 are allowed in this application.

2.   Claims 1-13,16,21-23,36,41-53,56 have been cancelled [Examiner's

Amendment]

3.   Claims 14,34,54 have been amended [Examiner's Amendment]

4.   Examiner acknowledges applicant's amendment filed on 3/21/2006.

5.   Claims 11,13,31,33,41,51,53-54 have been amended [3/21/2006].

Drawings

6.   The Drawings filed on 6/27/03 are <u>acceptable</u> for examination purpose

Information Disclosure Statement

7.   The information disclosure statement filed on 10/30/2003 is in compliance with

the provisions of 37 CFR 1.97, and has been considered and a copy is enclosed with

this Office Action.

Interview:

8.   Applicant's Attorney Jeffrey G. Toler, Reg.No. 38,342 is thanked for the

telephone interview on 20 December 2006. During that telephone interview *Jeffrey G.

Toler* granted authorization to **amend claims 14,34,54** and **cancel claims: 1-13,16,

21-23,36,41-53,56**.

EXAMINER'S AMENDMENT

9.   An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview

with Applicant's Attorney Jeffrey G. Toler on 20 December 2006.

The application has been amended as follows:

1-13. (**Canceled**)

14. (**Currently Amended**) A method of weighting search results, the method
comprising:

   submitting a search query to a plurality of search engines;

   receiving, from each of the plurality of search engines, an associated ranked list
        of search results based on the search query;

   receiving a plurality of actual relevance values for a plurality of the search results
        based on the search query;

   for at least one of the search results absent the actual relevance value,
        estimating its relevance value based on its rank, and the ranks and the
        actual relevance values of at least two others of the search results;

   determining, for each of the plurality of search engines, an associated weighting
        value;

determining, for each of the ranked lists, an associated weighted relevance value

for each of its search results based on the estimated relevance value or

the actual relevance value of the search result and the weighting value

associated with the search engine that provided the ranked list;

combining the ranked lists into a single list; and

sorting the search results in the single list based on the associated weighted

relevance values;

wherein said determining the associated weighting value for a search engine

comprises:

determining a plurality of categories associated with the search

query;

determining an associated category search engine weighting value

for each of the categories;

determining a first associated relevance value for each of the

categories based on the search query and one or more query terms

associated with the category;

determining a second associated relevance value for each of the

categories by dividing its first associated relevance value by a sum of all

first associated relevance values; and

determining the associated weighting value based on a sum, over

the categories, of each product of the associated category search engine

weighting value and the second associated relevance value, outputting the

search results.

15. (Original) The method of claim 14 wherein the actual values comprise normalized, search-engine-supplied relevance values.

16. (**Canceled**)

17. (Original) The method of claim 14 wherein said estimating comprises:

    fitting a curve, to represent relevance as a function of rank, to the actual

        relevance values and the ranks of the at least two others of the search

        results; and

    evaluating the curve at the rank of the particular search result to estimate the

        relevance value.

18. (Original) The method of claim 14 wherein said estimating comprises:

    determining an interpolation function, to represent relevance as a function of

        rank, for the actual relevance values and the ranks of the at least two

        others of the search results; and

    evaluating the interpolation function at the rank of the particular search result to

        estimate the relevance value.

19. (Original) The method of claim 14 wherein the actual relevance values are search-engine-supplied.

20. (Original) The method of claim 14 wherein the actual relevance values are not search-engine-supplied.

21-33. (Canceled)

34. (Currently Amended) An apparatus to weight search results, the apparatus comprising:

    a computer programmed to perform acts of:

    submitting a search query to a plurality of search engines;

    receiving, from each of the plurality of search engines, an associated ranked list

        of search results based on the search query;

    receiving a plurality of actual relevance values for a plurality of the search results

        based on the search query;

for at least one of the search results absent an actual relevance value, estimating
its relevance value based on its rank, and the ranks and the actual
relevance values of at least two others of the search results;

determining, for each of the plurality of search engines, an associated weighting
value;

determining, for each of the ranked lists, an associated weighted relevance value
for each of its search results based on the estimated relevance value or
the actual relevance value of the search result and the weighting value
associated with the search engine that provided the ranked list;

combining the ranked lists into a single list; and

sorting the search results in the single list based on the associated weighted
relevance values;

wherein said determining the associated weighting value for a search engine
comprises:

determining a plurality of categories associated with the search
query;

determining an associated category search engine weighting value
for each of the categories;

determining a first associated relevance value for each of the
categories based on the search query and one or more query terms
associated with the category;

determining a second associated relevance value for each of the
categories by dividing its first associated relevance value by a sum of all
first associated relevance values; and

determining the associated weighting value based on a sum, over
the categories, of each product of the associated category search engine
weighting value and the second associated relevance value, outputting the
search results.

35. (Original) The apparatus of claim 34, wherein the actual values comprise normalized, search-engine-supplied relevance values.

36. (**Canceled**)

37. (Original) The apparatus of claim 34 wherein said estimating comprises:

    fitting a curve, to represent relevance as a function of rank, to the actual relevance values and the ranks of the at least two others of the search results; and

    evaluating the curve at the rank of the particular search result to estimate the relevance value.

38. (Original) The apparatus of claim 34 wherein said estimating comprises:

    determining an interpolation function, to represent relevance as a function of rank, for the actual relevance values and the ranks of the at least two others of the search results; and

    evaluating the interpolation function at the rank of the particular search result to estimate the relevance value.

39. (Original) The apparatus of claim 34 wherein the actual relevance values are search-engine-supplied.

40. (Original) The apparatus of claim 34 wherein the actual relevance values are not search-engine-supplied.

41-53. (**Canceled**)

54. (**Currently amended**) An article <u>to weight search results, the article</u> comprising:

    a computer-readable storage medium having computer-readable program code to cause a computer to perform acts of:

submitting a search query to a plurality of search engines;

receiving, from each of the search engines, an associated ranked list of search results based on the search query;

receiving a plurality of actual relevance values for a plurality of the search results based on the search query;

for at least one of the plurality of search results absent an actual relevance value, estimating its relevance value based on its rank, and the ranks and the actual relevance values of at least two others of the search results;

determining, for each of the plurality of search engines, an associated weighting value;

determining, for each of the ranked lists, an associated weighted relevance value for each of its search results based on the estimated relevance value or the actual relevance value of the search result and the weighting value associated with the search engine that provided the ranked list;

combining the ranked lists into a single list; and

sorting the search results in the single list based on the associated weighted relevance values;

wherein said determining the associated weighting value for a search engine comprises:

determining a plurality of categories associated with the search query;

determining an associated category search engine weighting value for each of the categories;

determining a first associated relevance value for each of the categories based on the search query and one or more query terms associated with the category;

determining a second associated relevance value for each of the categories by dividing its first associated relevance value by a sum of all first associated relevance values; and

> determining the associated weighting value based on a sum, over
> the categories, of each product of the associated category search engine
> weighting value and the second associated relevance value, outputting the
> search results.

55. (Original) The article of claim 54 wherein the actual relevance values comprise normalized, search-engine-supplied relevance values.

56. (Canceled)

57. (Original) The article of claim 54 wherein said estimating comprises:

    fitting a curve, to represent relevance as a function of rank, to the actual relevance values and the ranks of the at least two others of the search results; and

    evaluating the curve at the rank of the particular search result to estimate the relevance value.

58. (Original) The article of claim 54 wherein said estimating comprises:

    determining an interpolation function, to represent relevance as a function of rank, for the actual relevance values and the ranks of the at least two others of the search results; and

    evaluating the interpolation function at the rank of the particular search result to estimate the relevance value.

59. (Original) The article of claim 54 wherein the actual relevance values are search-engine-supplied.

60. (Original) The article of claim 54 wherein the actual relevance values are not search-engine-supplied.

Pursuant to MPEP 606.01 the <u>Title</u> is changed to read

***--A RELEVANCE VALUE FOR EACH CATEGORY OF A PARTICULAR
SEARCH RESULT IN THE RANKED LIST IS ESTIMATED BASED ON ITS RANK
AND ACTUAL RELEVANCE VALUES --***

Reasons for allowance

Claims 14-15,17-20,34-35,37-40,54-55,57-60 are allowed

The following is an examiner's statement of reasons for indication of allowable subject matter: The prior art of record does not disclose, make obvious, or otherwise suggest the structure of the applicant's *"wherein said determining the associated weighting value for a search engine comprises: determining a plurality of categories associated with the search query; determining an associated category search engine weighting value for each of the categories; determining a first associated relevance value for each of the categories based on the search query and one or more query terms associated with the category; determining a second associated relevance value for each of the categories by dividing its first associated relevance value by a sum of all first associated relevance values; and determining the associated weighting value based on a sum, over the categories, of each product of the associated category search engine weighting value and the second associated relevance value"*, in claim 14,34,54.

These features, together with the other limitations of the independent claims are novel and non-obvious over the prior art of record. The dependent claims 15,17-20,35,37-40,55,57-60 being definite, enabled by the specification, and further limiting to the independent claims are also allowable.

The newly cited reference WO 2005/057359 published on 23 June 2005 issued to Gross, William et al. is directed to generating search result using a transparent search engine, more specifically, the system enables the sorting and filtering of search listings based upon one or more metrics or categories of information, listed on the search results page as part of multi-dimensional sort list. The system may also determine relevancy of a document based upon a weighting of the listing metrics corresponding to the listing [see Abstract, page 1, line 34-38, page 2, line 1-2].

The newly cited reference WO 2004/097671 published on 11 November 2004 issued to Holt, Alexander et al. is directed to refinement categories for a set of search results generated in response to a search query, more specifically, a category identifier system analyzes each search result and identifies at least one category from a hierarchy of categories for each search result, thereby providing a list of identified categories, a ranking system that ranks each category in the list of identified categories [see Abstract, page 2-3].

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Srirama Channavajjala whose telephone number is

571-272-4108. The examiner can normally be reached on Monday-Friday from

8:00 AM to 5:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Alam, Hosain, T, can be reached on (571) 272-3978. The fax phone

numbers for the organization where the application or proceeding is assigned is

571-273-8300 Information regarding the status of an application may be obtained

from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov.

Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free)

sc
Patent Examiner.
December 21, 2006.

SRIRAMA CHANNAVAJJALA
PRIMARY EXAMINER